



55382-23.ST25.txt  
SEQUENCE LISTING

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<120> METHODS AND COMPOSITIONS FOR DIAGNOSING HEPATOCELLULAR CARCINOMA

<130> 55382-23

<140> US 10/520,322

<141> 2004-12-30

<150> PCT/US03/20841

<151> 2003-07-03

<150> US60/393,982

<151> 2002-07-03

<160> 16

<170> PatentIn version 3.3

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<211> 195

<212> PRT

<213> Homo sapiens

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Met Lys Leu Ala Ser Gly Phe Leu Val Leu Trp Leu Ser Leu Gly Gly  
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Gly Leu Ala Gln Ser Asp Thr Ser Pro Asp Thr Glu Glu Ser Tyr Ser  
20 25 30

Asp Trp Gly Leu Arg His Leu Arg Gly Ser Phe Glu Ser Val Asn Ser  
35 40 45

Tyr Phe Asp Ser Phe Leu Glu Leu Leu Gly Gly Lys Asn Gly Val Cys  
50 55 60

Gln Tyr Arg Cys Arg Tyr Gly Lys Ala Pro Met Pro Arg Pro Gly Tyr  
65 70 75 80

Lys Pro Gln Glu Pro Asn Gly Cys Gly Ser Tyr Phe Leu Gly Leu Lys  
85 90 95

Val Pro Glu Ser Met Asp Leu Gly Ile Pro Ala Met Thr Lys Cys Cys  
100 105 110

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Asn Gln Leu Asp Val Cys Tyr Asp Thr Cys Gly Ala Asn Lys Tyr Arg  
115 120 125

Cys Asp Ala Lys Phe Arg Trp Cys Leu His Ser Ile Cys Ser Asp Leu  
130 135 140

Lys Arg Ser Leu Gly Phe Val Ser Lys Val Glu Ala Ala Cys Asp Ser  
145 150 155 160

Leu Val Asp Thr Val Phe Asn Thr Val Trp Thr Leu Gly Cys Arg Pro  
165 170 175

Phe Met Asn Ser Gln Arg Ala Ala Cys Ile Cys Ala Glu Glu Glu Lys  
180 185 190

Glu Glu Leu  
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Met Lys Leu Ala Ser Gly Phe Leu Val Leu Trp Leu Ser Leu Gly Gly  
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Gly Leu Ala Gln Ser Asp Thr Ser Pro Asp Thr Glu Glu Ser Tyr Ser  
20 25 30

Asp Trp Gly Leu Arg His Leu Arg Gly Ser Phe Glu Ser Val Asn Ser  
35 40 45

Tyr Phe Asp Ser Phe Leu Glu Leu Leu Gly Gly Lys Asn Gly Val Cys  
50 55 60

Gln Tyr Arg Cys Arg Tyr Gly Lys Ala Pro Met Pro Arg Pro Gly Tyr  
65 70 75 80

Lys Pro Gln Glu Pro Asn Gly Cys Gly Ser Tyr Phe Leu Gly Leu Lys  
85 90 95

Val Pro Glu Ser Met Asp Leu Gly Ile Pro Ala Met Thr Lys Cys Cys  
100 105 110

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Asn Gln Leu Asp Val Cys Tyr Asp Thr Cys Gly Ala Asn Lys Tyr Arg  
115 120 125

Cys Asp Ala Lys Phe Arg Trp Cys Leu His Ser Ile Cys Ser Asp Leu  
130 135 140

Lys Arg Ser Leu Gly Phe Val Ser Lys Val Glu Ala Cys Asp Ser Leu  
145 150 155 160

Val Asp Thr Val Phe Asn Thr Val Trp Thr Leu Gly Cys Arg Pro Phe  
165 170 175

Met Asn Ser Gln Arg Ala Ala Cys Ile Cys Ala Glu Glu Glu Lys Glu  
180 185 190

Glu Leu

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1 5 10 15

Tyr Leu Leu Ser Leu Leu Leu Ile Gly Phe Trp Asp Cys Val Thr Cys  
20 25 30

His Gly Ser Pro Val Asp Ile Cys Thr Ala Lys Pro Arg Asp Ile Pro  
35 40 45

Met Asn Pro Met Cys Ile Tyr Arg Ser Pro Glu Lys Lys Ala Thr Glu  
50 55 60

Asp Glu Gly Ser Glu Gln Lys Ile Pro Glu Ala Thr Asn Arg Arg Val  
65 70 75 80

Trp Glu Leu Ser Lys Ala Asn Ser Arg Phe Ala Thr Thr Phe Tyr Gln  
85 90 95

His Leu Ala Asp Ser Lys Asn Asp Asn Asp Asn Ile Phe Leu Ser Pro  
100 105 110

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Leu Ser Ile Ser Thr Ala Phe Ala Met Thr Lys Leu Gly Ala Cys Asn  
 115 120 125

Asp Thr Leu Gln Gln Leu Met Glu Val Phe Lys Phe Asp Thr Ile Ser  
 130 135 140

Glu Lys Thr Ser Asp Gln Ile His Phe Phe Phe Ala Lys Leu Asn Cys  
 145 150 155 160

Arg Leu Tyr Arg Lys Ala Asn Lys Ser Ser Lys Leu Val Ser Ala Asn  
 165 170 175

Arg Leu Phe Gly Asp Lys Ser Leu Thr Phe Asn Glu Thr Tyr Gln Asp  
 180 185 190

Ile Ser Glu Leu Val Tyr Gly Ala Lys Leu Gln Pro Leu Asp Phe Lys  
 195 200 205

Glu Asn Ala Glu Gln Ser Arg Ala Ala Ile Asn Lys Trp Val Ser Asn  
 210 215 220

Lys Thr Glu Gly Arg Ile Thr Asp Val Ile Pro Ser Glu Ala Ile Asn  
 225 230 235 240

Glu Leu Thr Val Leu Val Leu Val Asn Thr Ile Tyr Phe Lys Gly Leu  
 245 250 255

Trp Lys Ser Lys Phe Ser Pro Glu Asn Thr Arg Lys Glu Leu Phe Tyr  
 260 265 270

Lys Ala Asp Gly Glu Ser Cys Ser Ala Ser Met Met Tyr Gln Glu Gly  
 275 280 285

Lys Phe Arg Tyr Arg Arg Val Ala Glu Gly Thr Gln Val Leu Glu Leu  
 290 295 300

Pro Phe Lys Gly Asp Asp Ile Thr Met Val Leu Ile Leu Pro Lys Pro  
 305 310 315 320

Glu Lys Ser Leu Ala Lys Val Glu Lys Glu Leu Thr Pro Glu Val Leu  
 325 330 335

Gln Glu Trp Leu Asp Glu Leu Glu Glu Met Met Leu Val Val His Met  
 340 345 350

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Pro Arg Phe Arg Ile Glu Asp Gly Phe Ser Leu Lys Glu Gln Leu Gln  
355 360 365

Asp Met Gly Leu Val Asp Leu Phe Ser Pro Glu Lys Ser Lys Leu Pro  
370 375 380

Gly Ile Val Ala Glu Gly Arg Asp Asp Leu Tyr Val Ser Asp Ala Phe  
385 390 395 400

His Lys Ala Phe Leu Glu Val Asn Glu Glu Gly Ser Glu Ala Ala Ala  
405 410 415

Ser Thr Ala Val Val Ile Ala Gly Arg Ser Leu Asn Pro Asn Arg Val  
420 425 430

Thr Phe Lys Ala Asn Arg Pro Phe Leu Val Phe Ile Arg Glu Val Pro  
435 440 445

Leu Asn Thr Ile Ile Phe Met Gly Arg Val Ala Asn Pro Cys Val Lys  
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Lys Leu Pro Gln Gln Ala Asn Asp Tyr Leu Asn Ser Phe Asn Trp Glu  
20 25 30

Arg Gln Val Ser His Ala Lys Glu Lys Leu Thr Ala Leu Thr Lys Lys  
35 40 45

Tyr Arg Ile Thr Glu Asn Asp Ile Gln Ile Ala Leu Asp Asp Ala Lys  
50 55 60

Ile Asn Phe Asn Glu Lys Leu Ser Gln Leu Gln Thr Tyr Met Ile Gln  
65 70 75 80

Phe Asp Gln Tyr Ile Lys Asp Ser Tyr Asp Leu His Asp Leu Lys Ile  
85 90 95

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Ala Ile Ala Asn Ile Ile Asp Glu Ile Ile Glu Lys Leu Lys Ser Leu  
 100 105 110

Asp Glu His Tyr His Ile Arg Val Asn Leu Val Lys Thr Ile His Asp  
 115 120 125

Leu His Leu Phe Ile Glu Asn Ile Asp Phe Asn Lys Ser Gly Ser Ser  
 130 135 140

Thr Ala Ser Trp Ile Gln Asn Val Asp Thr Lys Tyr Gln Ile Arg Ile  
 145 150 155 160

Gln Ile Gln Glu Lys Leu Gln Gln Leu Lys Arg His Ile Gln Asn Ile  
 165 170 175

Asp Ile Gln His Leu Ala Gly Lys Leu Lys Gln His Ile Glu Ala Ile  
 180 185 190

Asp Val Arg Val Leu Leu Asp Gln Leu Gly Thr Thr Ile Ser Phe Glu  
 195 200 205

Arg Ile Asn Asp Val Leu Glu His Val Lys His Phe Val Ile Asn Leu  
 210 215 220

Ile Gly Asp Phe Glu Val Ala Glu Lys Ile Asn Ala Phe Arg Ala Lys  
 225 230 235 240

Val His Glu Leu Ile Glu Arg Tyr Glu Val Asp Gln Gln Ile Gln Val  
 245 250 255

Leu Met Asp Lys Leu Val Glu Leu Thr His Gln Tyr Lys Leu Lys Glu  
 260 265 270

Thr Ile Gln Lys Leu Ser Asn Val Leu Gln Gln Val Lys Ile Lys Asp  
 275 280 285

Tyr Phe Glu Lys Leu Val Gly Phe Ile Asp Asp Ala Val Lys Lys Leu  
 290 295 300

Asn Glu Leu Ser Phe Lys Thr Phe Ile Glu Asp Val Asn Lys Phe Leu  
 305 310 315 320

Asp Met Leu Ile Lys Lys Leu Lys Ser Phe Asp Tyr His Gln Phe Val  
 325 330 335

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Asp Glu Thr Asn Asp Lys Ile Arg Glu Val Thr Gln Arg Leu Asn Gly  
340 345 350

Glu Ile Gln Ala Leu Glu Leu Pro Gln Lys Ala Glu Ala Leu Lys Leu  
355 360 365

Phe Leu Glu Glu Thr Lys Ala Thr Val Ala Val Tyr Leu Glu Ser Leu  
370 375 380

Gln Asp Thr Lys Ile Thr Leu Ile Ile Asn Trp Leu Gln Glu Ala Leu  
385 390 395 400

Ser Ser Ala Ser Leu Ala His Met Lys Ala Lys Phe Arg Glu Thr Leu  
405 410 415

Glu Asp Thr Arg Asp Arg Met Tyr Gln Met Asp Ile Gln Gln Glu Leu  
420 425 430

Gln Arg Tyr Leu Ser Leu Val Gly Gln Val Tyr Ser Thr Leu Val Thr  
435 440 445

Tyr Ile Ser Asp Trp Trp Thr Leu Ala Ala Lys Asn Leu Thr Asp Phe  
450 455 460

Ala Glu Gln Tyr Ser Ile Gln Asp Trp Ala Lys Arg Met Lys Ala Leu  
465 470 475 480

Val Glu Gln Gly Phe Thr Val Pro Glu Ile Lys Thr Ile Leu Gly Thr  
485 490 495

Met Pro Ala Phe Glu Val Ser Leu Gln Ala Leu Gln Lys Ala Thr Phe  
500 505 510

Gln Thr Pro Asp Phe Ile Val Pro Leu Thr Asp Leu Arg Ile Pro Ser  
515 520 525

Val Gln Ile Asn Phe Lys Asp Leu Lys Asn Ile Lys Ile Pro Ser Arg  
530 535 540

Phe Ser Thr Pro Glu Phe Thr Ile Leu Asn Thr Phe His Ile Pro Ser  
545 550 555 560

Phe Thr Ile Asp Phe Val Glu Met Lys Val Lys Ile Ile Arg Thr Ile

565

570

575

Asp Gln Met Gln Asn Ser Glu Leu Gln Trp Pro Val Pro Asp Ile Tyr  
 580 585 590

Leu Arg Asp Leu Lys Val Glu Asp Ile Pro Leu Ala Arg Ile Thr Leu  
 595 600 605

Pro Asp Phe Arg Leu Pro Glu Ile Ala Ile Pro Glu Phe Ile Ile Pro  
 610 615 620

Thr Leu Asn Leu Asn Asp Phe Gln Val Pro Asp Leu His Ile Pro Glu  
 625 630 635 640

Phe Gln Leu Pro His Ile Ser His Thr Ile Glu Val Pro Thr Phe Gly  
 645 650 655

Lys Leu Tyr Ser Ile Leu Lys Ile Gln Ser Pro Leu Phe Thr Leu Asp  
 660 665 670

Ala Asn Ala Asp Ile Gly Asn Gly Thr Thr Ser Ala Asn Glu Ala Gly  
 675 680 685

Ile Ala Ala Ser Ile Thr Ala Lys Gly Glu Ser Lys Leu Glu Val Leu  
 690 695 700

Asn Phe Asp Phe Gln Ala Asn Ala Gln Leu Ser Asn Pro Lys Ile Asn  
 705 710 715 720

Pro Leu Ala Leu Lys Glu Ser Val Lys Phe Ser Ser Lys Tyr Leu Arg  
 725 730 735

Thr Glu His Gly Ser Glu Met Leu Phe Phe Gly Asn Ala Ile Glu Gly  
 740 745 750

Lys Ser Asn Thr Val Ala Ser Leu His Thr Glu Lys Asn Thr Leu Glu  
 755 760 765

Leu Ser Asn Gly Val Ile Val Lys Ile Asn Asn Gln Leu Thr Leu Asp  
 770 775 780

Ser Asn Thr Lys Tyr Phe His Lys Leu Asn Ile Pro Lys Leu Asp Phe  
 785 790 795 800



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Ser Ser Gln Ala Asp Leu Arg Asn Glu Ile Lys Thr Leu Leu Lys Ala  
805 810 815

Gly His Ile Ala Trp Thr Ser Ser Gly Lys Gly Ser Trp Lys Trp Ala  
820 825 830

Cys Pro Arg Phe Ser Asp Glu Gly Thr His Glu Ser Gln Ile Ser Phe  
835 840 845

Thr Ile Glu Gly Pro Leu Thr Ser Phe Gly Leu Ser Asn Lys Ile Asn  
850 855 860

Ser Lys His Leu Arg Val Asn Gln Asn Leu Val Tyr Glu Ser Gly Ser  
865 870 875 880

Leu Asn Phe Ser Lys Leu Glu Ile Gln Ser Gln Val Asp Ser Gln His  
885 890 895

Val Gly His Ser Val Leu Thr Ala Lys Gly Met Ala Leu Phe Gly Glu  
900 905 910

Gly Lys Ala Glu Phe Thr Gly Arg His Asp Ala His Leu Asn Gly Lys  
915 920 925

Val Ile Gly Thr Leu Lys Asn Ser Leu Phe Phe Ser Ala Gln Pro Phe  
930 935 940

Glu Ile Thr Ala Ser Thr Asn Asn Glu Gly Asn Leu Lys Val Arg Phe  
945 950 955 960

Pro Leu Arg Leu Thr Gly Lys Ile Asp Phe Leu Asn Asn Tyr Ala Leu  
965 970 975

Phe Leu Ser Pro Ser Ala Gln Gln Ala Ser Trp Gln Val Ser Ala Arg  
980 985 990

Phe Asn Gln Tyr Lys Tyr Asn Gln Asn Phe Ser Ala Gly Asn Asn Glu  
995 1000 1005

Asn Ile Met Glu Ala His Val Gly Ile Asn Gly Glu Ala Asn Leu  
1010 1015 1020

Asp Phe Leu Asn Ile Pro Leu Thr Ile Pro Glu Met Arg Leu Pro  
1025 1030 1035

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Tyr	Thr	Ile	Ile	Thr	Thr	Pro	Pro	Leu	Lys	Asp	Phe	Ser	Leu	Trp
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Glu	Lys	Thr	Gly	Leu	Lys	Glu	Phe	Leu	Lys	Thr	Thr	Lys	Gln	Ser
1055						1060					1065			
Phe	Asp	Leu	Ser	Val	Lys	Ala	Gln	Tyr	Lys	Lys	Asn	Lys	His	Arg
1070						1075					1080			
His	Ser	Ile	Thr	Asn	Pro	Leu	Ala	Val	Leu	Cys	Glu	Phe	Ile	Ser
1085						1090					1095			
Gln	Ser	Ile	Lys	Ser	Phe	Asp	Arg	His	Phe	Glu	Lys	Asn	Arg	Asn
1100						1105					1110			
Asn	Ala	Leu	Asp	Phe	Val	Thr	Lys	Ser	Tyr	Asn	Glu	Thr	Lys	Ile
1115						1120					1125			
Lys	Phe	Asp	Lys	Tyr	Lys	Ala	Glu	Lys	Ser	His	Asp	Glu	Leu	Pro
1130						1135					1140			
Arg	Thr	Phe	Gln	Ile	Pro	Gly	Tyr	Thr	Val	Pro	Val	Val	Asn	Val
1145						1150					1155			
Glu	Val	Ser	Pro	Phe	Thr	Ile	Glu	Met	Ser	Ala	Phe	Gly	Tyr	Val
1160						1165					1170			
Phe	Pro	Lys	Ala	Val	Ser	Met	Pro	Ser	Phe	Ser	Ile	Leu	Gly	Ser
1175						1180					1185			
Asp	Val	Arg	Val	Pro	Ser	Tyr	Thr	Leu	Ile	Leu	Pro	Ser	Leu	Glu
1190						1195					1200			
Leu	Pro	Val	Leu	His	Val	Pro	Arg	Asn	Leu	Lys	Leu	Ser	Leu	Pro
1205						1210					1215			
His	Phe	Lys	Glu	Leu	Cys	Thr	Ile	Ser	His	Ile	Phe	Ile	Pro	Ala
1220						1225					1230			
Met	Gly	Asn	Ile	Thr	Tyr	Asp	Phe	Ser	Phe	Lys	Ser	Ser	Val	Ile
1235						1240					1245			
Thr	Leu	Asn	Thr	Asn	Ala	Glu	Leu	Phe	Asn	Gln	Ser	Asp	Ile	Val
1250						1255					1260			

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Ala His Leu Leu Ser Ser Ser Ser Ser Val Ile Asp Ala Leu Gln  
1265 1270 1275

Tyr Lys Leu Glu Gly Thr Thr Arg Leu Thr Arg Lys Arg Gly Leu  
1280 1285 1290

Lys Leu Ala Thr Ala Leu Ser Leu Ser Asn Lys Phe Val Glu Gly  
1295 1300 1305

Ser His Asn Ser Thr Val Ser Leu Thr Thr Lys Asn Met Glu Val  
1310 1315 1320

Ser Val Ala Lys Thr Thr Lys Ala Glu Ile Pro Ile Leu Arg Met  
1325 1330 1335

Asn Phe Lys Gln Glu Leu Asn Gly Asn Thr Lys Ser Lys Pro Thr  
1340 1345 1350

Val Ser Ser Ser Met Glu Phe Lys Tyr Asp Phe Asn Ser Ser Met  
1355 1360 1365

Leu Tyr Ser Thr Ala Lys Gly Ala Val Asp His Lys Leu Ser Leu  
1370 1375 1380

Glu Ser Leu Thr Ser Tyr Phe Ser Ile Glu Ser Ser Thr Lys Gly  
1385 1390 1395

Asp Val Lys Gly Ser Val Leu Ser Arg Glu Tyr Ser Gly Thr Ile  
1400 1405 1410

Ala Ser Glu Ala Asn Thr Tyr Leu Asn Ser Lys Ser Thr Arg Ser  
1415 1420 1425

Ser Val Lys Leu Gln Gly Thr Ser Lys Ile Asp Asp Ile Trp Asn  
1430 1435 1440

Leu Glu Val Lys Glu Asn Phe Ala Gly Glu Ala Thr Leu Gln Arg  
1445 1450 1455

Ile Tyr Ser Leu Trp Glu His Ser Thr Lys Asn His Leu Gln Leu  
1460 1465 1470

Glu Gly Leu Phe Phe Thr Asn Gly Glu His Thr Ser Lys Ala Thr

1475		1480		1485
Leu Glu	Leu Ser Pro Trp	Gln Met Ser Ala Leu	Val Gln Val His	
1490		1495	1500	
Ala Ser	Gln Pro Ser Ser	Phe His Asp Phe Pro	Asp Leu Gly Gln	
1505		1510	1515	
Glu Val	Ala Leu Asn Ala	Asn Thr Lys Asn Gln	Lys Ile Arg Trp	
1520		1525	1530	
Lys Asn	Glu Val Arg Ile	His Ser Gly Ser Phe	Gln Ser Gln Val	
1535		1540	1545	
Glu Leu	Ser Asn Asp Gln	Glu Lys Ala His Leu	Asp Ile Ala Gly	
1550		1555	1560	
Ser Leu	Glu Gly His Leu	Arg Phe Leu Lys Asn	Ile Ile Leu Pro	
1565		1570	1575	
Val Tyr	Asp Lys Ser Leu	Trp Asp Phe Leu Lys	Leu Asp Val Thr	
1580		1585	1590	
Thr Ser	Ile Gly Arg Arg	Gln His Leu Arg Val	Ser Thr Ala Phe	
1595		1600	1605	
Val Tyr	Thr Lys Asn Pro	Asn Gly Tyr Ser Phe	Ser Ile Pro Val	
1610		1615	1620	
Lys Val	Leu Ala Asp Lys	Phe Ile Thr Pro Gly	Leu Lys Leu Asn	
1625		1630	1635	
Asp Leu	Asn Ser Val Leu	Val Met Pro Thr Phe	His Val Pro Phe	
1640		1645	1650	
Thr Asp	Leu Gln Val Pro	Ser Cys Lys Leu Asp	Phe Arg Glu Ile	
1655		1660	1665	
Gln Ile	Tyr Lys Lys Leu	Arg Thr Ser Ser Phe	Ala Leu Asn Leu	
1670		1675	1680	
Pro Thr	Leu Pro Glu Val	Lys Phe Pro Glu Val	Asp Val Leu Thr	
1685		1690	1695	

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Lys Tyr Ser Gln Pro Glu Asp Ser Leu Ile Pro Phe Phe Glu Ile  
 1700 1705 1710  
  
 Thr Val Pro Glu Ser Gln Leu Thr Val Ser Gln Phe Thr Leu Pro  
 1715 1720 1725  
  
 Lys Ser Val Ser Asp Gly Ile Ala Ala Leu Asp Leu Asn Ala Val  
 1730 1735 1740  
  
 Ala Asn Lys Ile Ala Asp Phe Glu Leu Pro Thr Ile Ile Val Pro  
 1745 1750 1755  
  
 Glu Gln Thr Ile Glu Ile Pro Ser Ile Lys Phe Ser Val Pro Ala  
 1760 1765 1770  
  
 Gly Ile Val Ile Pro Ser Phe Gln Ala Leu Thr Ala Arg Phe Glu  
 1775 1780 1785  
  
 Val Asp Ser Pro Val Tyr Asn Ala Thr Trp Ser Ala Ser Leu Lys  
 1790 1795 1800  
  
 Asn Lys Ala Asp Tyr Val Glu Thr Val Leu Asp Ser Thr Cys Ser  
 1805 1810 1815  
  
 Ser Thr Val Gln Phe Leu Glu Tyr Glu Leu Asn Val Leu Gly Thr  
 1820 1825 1830  
  
 His Lys Ile Glu Asp Gly Thr Leu Ala Ser Lys Thr Lys Gly Thr  
 1835 1840 1845  
  
 Leu Ala His Arg Asp Phe Ser Ala Glu Tyr Glu Glu Asp Gly Lys  
 1850 1855 1860  
  
 Phe Glu Gly Leu Gln Glu Trp Glu Gly Lys Ala His Leu Asn Ile  
 1865 1870 1875  
  
 Lys Ser Pro Ala Phe Thr Asp Leu His Leu Arg Tyr Gln Lys Asp  
 1880 1885 1890  
  
 Lys Lys Gly Ile Ser Thr Ser Ala Ala Ser Pro Ala Val Gly Thr  
 1895 1900 1905  
  
 Val Gly Met Asp Met Asp Glu Asp Asp Asp Phe Ser Lys Trp Asn  
 1910 1915 1920

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Phe Tyr Tyr Ser Pro Gln Ser Ser Pro Asp Lys Lys Leu Thr Ile  
 1925 1930 1935  
  
 Phe Lys Thr Glu Leu Arg Val Arg Glu Ser Asp Glu Glu Thr Gln  
 1940 1945 1950  
  
 Ile Lys Val Asn Trp Glu Glu Glu Ala Ala Ser Gly Leu Leu Thr  
 1955 1960 1965  
  
 Ser Leu Lys Asp Asn Val Pro Lys Ala Thr Gly Val Leu Tyr Asp  
 1970 1975 1980  
  
 Tyr Val Asn Lys Tyr His Trp Glu His Thr Gly Leu Thr Leu Arg  
 1985 1990 1995  
  
 Glu Val Ser Ser Lys Leu Arg Arg Asn Leu Gln Asn Asn Ala Glu  
 2000 2005 2010  
  
 Trp Val Tyr Gln Gly Ala Ile Arg Gln Ile Asp Asp Ile Asp Val  
 2015 2020 2025  
  
 Arg Phe Gln Lys Ala Ala Ser Gly Thr Thr Gly Thr Tyr Gln Glu  
 2030 2035 2040  
  
 Trp Lys Asp Lys Ala Gln Asn Leu Tyr Gln Glu Leu Leu Thr Gln  
 2045 2050 2055  
  
 Glu Gly Gln Ala Ser Phe Gln Gly Leu Lys Asp Asn Val Phe Asp  
 2060 2065 2070  
  
 Gly Leu Val Arg Val Thr Gln Lys Phe His Met Lys Val Lys His  
 2075 2080 2085  
  
 Leu Ile Asp Ser Leu Ile Asp Phe Leu Asn Phe Pro Arg Phe Gln  
 2090 2095 2100  
  
 Phe Pro Gly Lys Pro Gly Ile Tyr Thr Arg Glu Glu Leu Cys Thr  
 2105 2110 2115  
  
 Met Phe Ile Arg Glu Val Gly Thr Val Leu Ser Gln Val Tyr Ser  
 2120 2125 2130  
  
 Lys Val His Asn Gly Ser Glu Ile Leu Phe Ser Tyr Phe Gln Asp  
 2135 2140 2145

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Leu Val	Ile Thr	Leu Pro	Phe	Glu Leu	Arg Lys	His	Lys Leu	Ile
2150			2155			2160		
Asp Val	Ile Ser	Met Tyr	Arg	Glu Leu	Leu Lys	Asp	Leu Ser	Lys
2165			2170			2175		
Glu Ala	Gln Glu	Val Phe	Lys	Ala Ile	Gln Ser	Leu	Lys Thr	Thr
2180			2185			2190		
Glu Val	Leu Arg	Asn Leu	Gln	Asp Leu	Leu Gln	Phe	Ile Phe	Gln
2195			2200			2205		
Leu Ile	Glu Asp	Asn Ile	Lys	Gln Leu	Lys Glu	Met	Lys Phe	Thr
2210			2215			2220		
Tyr Leu	Ile Asn	Tyr Ile	Gln	Asp Glu	Ile Asn	Thr	Ile Phe	Asn
2225			2230			2235		
Asp Tyr	Ile Pro	Tyr Val	Phe	Lys Leu	Leu Lys	Glu	Asn Leu	Cys
2240			2245			2250		
Leu Asn	Leu His	Lys Phe	Asn	Glu Phe	Ile Gln	Asn	Glu Leu	Gln
2255			2260			2265		
Glu Ala	Ser Gln	Glu Leu	Gln	Gln Ile	His Gln	Tyr	Ile Met	Ala
2270			2275			2280		
Leu Arg	Glu Glu	Tyr Phe	Asp	Pro Ser	Ile Val	Gly	Trp Thr	Val
2285			2290			2295		
Lys Tyr	Tyr Glu	Leu Glu	Glu	Lys Ile	Val Ser	Leu	Ile Lys	Asn
2300			2305			2310		
Leu Leu	Val Ala	Leu Lys	Asp	Phe His	Ser Glu	Tyr	Ile Val	Ser
2315			2320			2325		
Ala Ser	Asn Phe	Thr Ser	Gln	Leu Ser	Ser Gln	Val	Glu Gln	Phe
2330			2335			2340		
Leu His	Arg Asn	Ile Gln	Glu	Tyr Leu	Ser Ile	Leu	Thr Asp	Pro
2345			2350			2355		
Asp Gly	Lys Gly	Lys Glu	Lys	Ile Ala	Glu Leu	Ser	Ala Thr	Ala

2360

2365

2370

Gln Glu Ile Ile Lys Ser Gln Ala Ile Ala Thr Lys Lys Ile Ile  
 2375 2380 2385

Ser Asp Tyr His Gln Gln Phe Arg Tyr Lys Leu Gln Asp Phe Ser  
 2390 2395 2400

Asp Gln Leu Ser Asp Tyr Tyr Glu Lys Phe Ile Ala Glu Ser Lys  
 2405 2410 2415

Arg Leu Ile Asp Leu Ser Ile Gln Asn Tyr His Thr Phe Leu Ile  
 2420 2425 2430

Tyr Ile Thr Glu Leu Leu Lys Lys Leu Gln Ser Thr Thr Val Met  
 2435 2440 2445

Asn Pro Tyr Met Lys Leu Ala Pro Gly Glu Leu Thr Ile Ile Leu  
 2450 2455 2460

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<400> 5

Met Lys Arg Val Leu Val Leu Leu Leu Ala Val Ala Phe Gly His Ala  
 1 5 10 15

Leu Glu Arg Gly Arg Asp Tyr Glu Lys Asn Lys Val Cys Lys Glu Phe  
 20 25 30

Ser His Leu Gly Lys Glu Asp Phe Thr Ser Leu Ser Leu Val Leu Tyr  
 35 40 45

Ser Arg Lys Phe Pro Ser Gly Thr Phe Glu Gln Val Ser Gln Leu Val  
 50 55 60

Lys Glu Val Val Ser Leu Thr Glu Ala Cys Cys Ala Glu Gly Ala Asp  
 65 70 75 80

Pro Asp Cys Tyr Asp Thr Arg Thr Ser Ala Leu Ser Ala Lys Ser Cys  
 85 90 95

Glu Ser Asn Ser Pro Phe Pro Val His Pro Gly Thr Ala Glu Cys Cys



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100                               105                               110

Thr Lys Glu Gly Leu Glu Arg Lys Leu Cys Met Ala Ala Leu Lys His
115                               120                               125

Gln Pro Gln Glu Phe Pro Thr Tyr Val Glu Pro Thr Asn Asp Glu Ile
130                               135                               140

Cys Glu Ala Phe Arg Lys Asp Pro Lys Glu Tyr Ala Asn Gln Phe Met
145                               150                               155                               160

Trp Glu Tyr Ser Thr Asn Tyr Glu Gln Ala Pro Leu Ser Leu Leu Val
165                               170                               175

Ser Tyr Thr Lys Ser Tyr Leu Ser Met Val Gly Ser Cys Cys Thr Ser
180                               185                               190

Ala Ser Pro Thr Val Cys Phe Leu Lys Glu Arg Leu Gln Leu Lys His
195                               200                               205

Leu Ser Leu Leu Thr Thr Leu Ser Asn Arg Val Cys Ser Gln Tyr Ala
210                               215                               220

Ala Tyr Gly Glu Lys Lys Ser Arg Leu Ser Asn Leu Ile Lys Leu Ala
225                               230                               235                               240

Gln Lys Val Pro Thr Ala Asp Leu Glu Asp Val Leu Pro Leu Ala Glu
245                               250                               255

Asp Ile Thr Asn Ile Leu Ser Lys Cys Cys Glu Ser Ala Ser Glu Asp
260                               265                               270

Cys Met Ala Lys Glu Leu Pro Glu His Thr Val Lys Leu Cys Asp Asn
275                               280                               285

Leu Ser Thr Lys Asn Ser Lys Phe Glu Asp Cys Cys Gln Glu Lys Thr
290                               295                               300

Ala Met Asp Val Phe Val Cys Thr Tyr Phe Met Pro Ala Ala Gln Leu
305                               310                               315                               320

Pro Glu Leu Pro Asp Val Arg Leu Pro Thr Asn Lys Asp Val Cys Asp
325                               330                               335

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55382-23.ST25.txt

Pro Gly Asn Thr Lys Val Met Asp Lys Tyr Thr Phe Glu Leu Ser Arg  
340 345 350

Arg Thr His Leu Pro Glu Val Phe Leu Ser Lys Val Leu Glu Pro Thr  
355 360 365

Leu Lys Ser Leu Gly Glu Cys Cys Asp Val Glu Asp Ser Thr Thr Cys  
370 375 380

Phe Asn Ala Lys Gly Pro Leu Leu Lys Lys Glu Leu Ser Ser Phe Ile  
385 390 395 400

Asp Lys Gly Gln Glu Leu Cys Ala Asp Tyr Ser Glu Asn Thr Phe Thr  
405 410 415

Glu Tyr Lys Lys Lys Leu Ala Glu Arg Leu Lys Ala Lys Leu Pro Glu  
420 425 430

Ala Thr Pro Thr Glu Leu Ala Lys Leu Val Asn Lys Arg Ser Asp Phe  
435 440 445

Ala Ser Asn Cys Cys Ser Ile Asn Ser Pro Pro Leu Tyr Cys Asp Ser  
450 455 460

Glu Ile Asp Ala Glu Leu Lys Asn Ile Leu  
465 470

<210> 6  
<211> 474  
<212> PRT  
<213> Homo sapiens

<400> 6

Met Lys Arg Val Leu Val Leu Leu Leu Ala Val Ala Phe Gly His Ala  
1 5 10 15

Leu Glu Arg Gly Arg Asp Tyr Glu Lys Asn Lys Val Cys Lys Glu Phe  
20 25 30

Ser His Leu Gly Lys Glu Asp Phe Thr Ser Leu Ser Leu Val Leu Tyr  
35 40 45

Ser Arg Lys Phe Pro Ser Gly Thr Phe Glu Gln Val Ser Gln Leu Val  
50 55 60

## 55382-23.ST25.txt

Lys Glu Val Val Ser Leu Thr Glu Ala Cys Cys Ala Glu Gly Ala Asp  
 65 70 75 80

Pro Asp Cys Tyr Asp Thr Arg Thr Ser Ala Leu Ser Ala Lys Ser Cys  
 85 90 95

Glu Ser Asn Ser Pro Phe Pro Val His Pro Gly Thr Ala Glu Cys Cys  
 100 105 110

Thr Lys Glu Gly Leu Glu Arg Lys Leu Cys Met Ala Ala Leu Lys His  
 115 120 125

Gln Pro Gln Glu Phe Pro Thr Tyr Val Glu Pro Thr Asn Asp Glu Ile  
 130 135 140

Cys Glu Ala Phe Arg Lys Asp Pro Lys Glu Tyr Ala Asn Gln Phe Met  
 145 150 155 160

Trp Glu Tyr Ser Thr Asn Tyr Gly Gln Ala Pro Leu Ser Leu Leu Val  
 165 170 175

Ser Tyr Thr Lys Ser Tyr Leu Ser Met Val Gly Ser Cys Cys Thr Ser  
 180 185 190

Ala Ser Pro Thr Val Cys Phe Leu Lys Glu Arg Leu Gln Leu Lys His  
 195 200 205

Leu Ser Leu Leu Thr Thr Leu Ser Asn Arg Val Cys Ser Gln Tyr Ala  
 210 215 220

Ala Tyr Gly Glu Lys Lys Ser Arg Leu Ser Asn Leu Ile Lys Leu Ala  
 225 230 235 240

Gln Lys Val Pro Thr Ala Asp Leu Glu Asp Val Leu Pro Leu Ala Glu  
 245 250 255

Asp Ile Thr Asn Ile Leu Ser Lys Cys Cys Glu Ser Ala Ser Glu Asp  
 260 265 270

Cys Met Ala Lys Glu Leu Pro Glu His Thr Val Lys Leu Cys Asp Asn  
 275 280 285

Leu Ser Thr Lys Asn Ser Lys Phe Glu Asp Cys Cys Gln Glu Lys Thr  
 290 295 300

55382-23.ST25.txt

Ala Met Asp Val Phe Val Cys Thr Tyr Phe Met Pro Ala Ala Gln Leu  
305 310 315 320

Pro Glu Leu Pro Asp Val Glu Leu Pro Thr Asn Lys Asp Val Cys Asp  
325 330 335

Pro Gly Asn Thr Lys Val Met Asp Lys Tyr Thr Phe Glu Leu Ser Arg  
340 345 350

Arg Thr His Leu Pro Glu Val Phe Leu Ser Lys Val Leu Glu Pro Thr  
355 360 365

Leu Lys Ser Leu Gly Glu Cys Cys Asp Val Glu Asp Ser Thr Thr Cys  
370 375 380

Phe Asn Ala Lys Gly Pro Leu Leu Lys Lys Glu Leu Ser Ser Phe Ile  
385 390 395 400

Asp Lys Gly Gln Glu Leu Cys Ala Asp Tyr Ser Glu Asn Thr Phe Thr  
405 410 415

Glu Tyr Lys Lys Lys Leu Ala Glu Arg Leu Lys Ala Lys Leu Pro Glu  
420 425 430

Ala Thr Pro Thr Glu Leu Ala Lys Leu Val Asn Lys Arg Ser Asp Phe  
435 440 445

Ala Ser Asn Cys Cys Ser Ile Asn Ser Pro Pro Leu Tyr Cys Asp Ser  
450 455 460

Glu Ile Asp Ala Glu Leu Lys Asn Ile Leu  
465 470

<210> 7  
<211> 318  
<212> PRT  
<213> Homo sapiens

<400> 7

Met Ala Ser Pro Gly Cys Leu Leu Cys Val Leu Gly Leu Leu Leu Cys  
1 5 10 15

Gly Ala Ala Ser Leu Glu Leu Ser Arg Pro His Gly Asp Thr Ala Lys  
20 25 30

## 55382-23.ST25.txt

Lys Pro Ile Ile Gly Ile Leu Met Gln Lys Cys Arg Asn Lys Val Met  
 35 40 45  
 Lys Asn Tyr Gly Arg Tyr Tyr Ile Ala Ala Ser Tyr Val Lys Tyr Leu  
 50 55 60  
 Glu Ser Ala Gly Ala Arg Val Val Pro Val Arg Leu Asp Leu Thr Glu  
 65 70 75 80  
 Lys Asp Tyr Glu Ile Leu Phe Lys Ser Ile Asn Gly Ile Leu Phe Pro  
 85 90 95  
 Gly Gly Ser Val Asp Leu Arg Arg Ser Asp Tyr Ala Lys Val Ala Lys  
 100 105 110  
 Ile Phe Tyr Asn Leu Ser Ile Gln Ser Phe Asp Asp Gly Asp Tyr Phe  
 115 120 125  
 Pro Val Trp Gly Thr Cys Leu Gly Phe Glu Glu Leu Ser Leu Leu Ile  
 130 135 140  
 Ser Gly Glu Cys Leu Leu Thr Ala Thr Asp Thr Val Asp Val Ala Met  
 145 150 155 160  
 Pro Leu Asn Phe Thr Gly Gly Gln Leu His Ser Arg Met Phe Gln Asn  
 165 170 175  
 Phe Pro Thr Glu Leu Leu Leu Ser Leu Ala Val Glu Pro Leu Thr Ala  
 180 185 190  
 Asn Phe His Lys Trp Ser Leu Ser Val Lys Asn Phe Thr Met Asn Glu  
 195 200 205  
 Lys Leu Lys Lys Phe Phe Asn Val Leu Thr Thr Asn Thr Asp Gly Lys  
 210 215 220  
 Ile Glu Phe Ile Ser Thr Met Glu Gly Tyr Lys Tyr Pro Val Tyr Gly  
 225 230 235 240  
 Val Gln Trp His Pro Glu Lys Ala Pro Tyr Glu Trp Lys Asn Leu Asp  
 245 250 255  
 Gly Ile Ser His Ala Pro Asn Ala Val Lys Thr Ala Phe Tyr Leu Ala  
 260 265 270

55382-23.ST25.txt

Glu Phe Phe Val Asn Glu Ala Arg Lys Asn Asn His His Phe Lys Ser  
275 280 285

Glu Ser Glu Glu Glu Lys Ala Leu Ile Tyr Gln Phe Ser Pro Ile Tyr  
290 295 300

Thr Gly Asn Ile Ser Ser Phe Gln Gln Cys Tyr Ile Phe Asp  
305 310 315

<210> 8  
<211> 709  
<212> PRT  
<213> Homo sapiens

<400> 8

Met Ala Thr Ala Gly Gly Gly Ser Gly Ala Asp Pro Gly Ser Arg Gly  
1 5 10 15

Leu Leu Arg Leu Leu Ser Phe Cys Val Leu Leu Ala Gly Leu Cys Arg  
20 25 30

Gly Asn Ser Val Glu Arg Lys Ile Tyr Ile Pro Leu Asn Lys Thr Ala  
35 40 45

Pro Cys Val Arg Leu Leu Asn Ala Thr His Gln Ile Gly Cys Gln Ser  
50 55 60

Ser Ile Ser Gly Asp Thr Gly Val Ile His Val Val Glu Lys Glu Glu  
65 70 75 80

Asp Leu Gln Trp Val Leu Thr Asp Gly Pro Asn Pro Pro Tyr Met Val  
85 90 95

Leu Leu Glu Ser Lys His Phe Thr Arg Asp Leu Met Glu Lys Leu Lys  
100 105 110

Gly Arg Thr Ser Arg Ile Ala Gly Leu Ala Val Ser Leu Thr Lys Pro  
115 120 125

Ser Pro Ala Ser Gly Phe Ser Pro Ser Val Gln Cys Pro Asn Asp Gly  
130 135 140

Phe Gly Val Tyr Ser Asn Ser Tyr Gly Pro Glu Phe Ala His Cys Arg  
145 150 155 160

55382-23.ST25.txt

Glu Ile Gln Trp Asn Ser Leu Gly Asn Gly Leu Ala Tyr Glu Asp Phe  
165 170 175

Ser Phe Pro Ile Phe Leu Leu Glu Asp Glu Asn Glu Thr Lys Val Ile  
180 185 190

Lys Gln Cys Tyr Gln Asp His Asn Leu Ser Gln Asn Gly Ser Ala Pro  
195 200 205

Thr Phe Pro Leu Cys Ala Met Gln Leu Phe Ser His Met His Ala Val  
210 215 220

Ile Ser Thr Ala Thr Cys Met Arg Arg Ser Ser Ile Gln Ser Thr Phe  
225 230 235 240

Ser Ile Asn Pro Glu Ile Val Cys Asp Pro Leu Ser Asp Tyr Asn Val  
245 250 255

Trp Ser Met Leu Lys Pro Ile Asn Thr Thr Gly Thr Leu Lys Pro Asp  
260 265 270

Asp Arg Val Val Val Ala Ala Thr Arg Leu Asp Ser Arg Ser Phe Phe  
275 280 285

Trp Asn Val Ala Pro Gly Ala Glu Ser Ala Val Ala Ser Phe Val Thr  
290 295 300

Gln Leu Ala Ala Ala Glu Ala Leu Gln Lys Ala Pro Asp Val Thr Thr  
305 310 315 320

Leu Pro Arg Asn Val Met Phe Val Phe Phe Gln Gly Glu Thr Phe Asp  
325 330 335

Tyr Ile Gly Ser Ser Arg Met Val Tyr Asp Met Glu Lys Gly Lys Phe  
340 345 350

Pro Val Gln Leu Glu Asn Val Asp Ser Phe Val Glu Leu Gly Gln Val  
355 360 365

Ala Leu Arg Thr Ser Leu Glu Leu Trp Met His Thr Asp Pro Val Ser  
370 375 380

Gln Lys Asn Glu Ser Val Arg Asn Gln Val Glu Asp Leu Leu Ala Thr

## 55382-23.ST25.txt

```

385              390              395              400

Leu Glu Lys Ser Gly Ala Gly Val Pro Ala Val Ile Leu Arg Arg Pro
              405              410              415

Asn Gln Ser Gln Pro Leu Pro Pro Ser Ser Leu Gln Arg Phe Leu Arg
              420              425              430

Ala Arg Asn Ile Ser Gly Val Val Leu Ala Asp His Ser Gly Ala Phe
              435              440              445

His Asn Lys Tyr Tyr Gln Ser Ile Tyr Asp Thr Ala Glu Asn Ile Asn
              450              455              460

Val Ser Tyr Pro Glu Trp Leu Ser Pro Glu Glu Asp Leu Asn Phe Val
465              470              475              480

Thr Asp Thr Ala Lys Ala Leu Ala Asp Val Ala Thr Val Leu Gly Arg
              485              490              495

Ala Leu Tyr Glu Leu Ala Gly Gly Thr Asn Phe Ser Asp Thr Val Gln
              500              505              510

Ala Asp Pro Gln Thr Val Thr Arg Leu Leu Tyr Gly Phe Leu Ile Lys
              515              520              525

Ala Asn Asn Ser Trp Phe Gln Ser Ile Leu Arg Gln Asp Leu Arg Ser
              530              535              540

Tyr Leu Gly Asp Gly Pro Leu Gln His Tyr Ile Ala Val Ser Ser Pro
545              550              555              560

Thr Asn Thr Thr Tyr Val Val Gln Tyr Ala Leu Ala Asn Leu Thr Gly
              565              570              575

Thr Val Val Asn Leu Thr Arg Glu Gln Cys Gln Asp Pro Ser Lys Val
              580              585              590

Pro Ser Glu Asn Lys Asp Leu Tyr Glu Tyr Ser Trp Val Gln Gly Pro
              595              600              605

Leu His Ser Asn Glu Thr Asp Arg Leu Pro Arg Cys Val Arg Ser Thr
              610              615              620

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55382-23.ST25.txt

Ala Arg Leu Ala Arg Ala Leu Ser Pro Ala Phe Glu Leu Ser Gln Trp  
625 630 635 640

Ser Ser Thr Glu Tyr Ser Thr Trp Thr Glu Ser Arg Trp Lys Asp Ile  
645 650 655

Arg Ala Arg Ile Phe Leu Ile Ala Ser Lys Glu Leu Glu Leu Ile Thr  
660 665 670

Leu Thr Val Gly Phe Gly Ile Leu Ile Phe Ser Leu Ile Val Thr Tyr  
675 680 685

Cys Ile Asn Ala Lys Ala Asp Val Leu Phe Ile Ala Pro Arg Glu Pro  
690 695 700

Gly Ala Val Ser Tyr  
705

<210> 9  
<211> 347  
<212> PRT  
<213> Homo sapiens

<400> 9

Met Ala Gln Ser Arg Asp Gly Gly Asn Pro Phe Ala Glu Pro Ser Glu  
1 5 10 15

Leu Asp Asn Pro Phe Gln Asp Pro Ala Val Ile Gln His Arg Pro Ser  
20 25 30

Arg Gln Tyr Ala Thr Leu Asp Val Tyr Asn Pro Phe Glu Thr Arg Glu  
35 40 45

Pro Pro Pro Ala Tyr Glu Pro Pro Ala Pro Ala Pro Leu Pro Pro Pro  
50 55 60

Ser Ala Pro Ser Leu Gln Pro Ser Arg Lys Leu Ser Pro Thr Glu Pro  
65 70 75 80

Lys Asn Tyr Gly Ser Tyr Ser Thr Gln Ala Ser Ala Ala Ala Ala Thr  
85 90 95

Ala Glu Leu Leu Lys Lys Gln Glu Glu Leu Asn Arg Lys Ala Glu Glu  
100 105 110

## 55382-23.ST25.txt

```

Leu Asp Arg Arg Glu Arg Glu Leu Gln His Ala Ala Leu Gly Gly Thr
  115                      120                      125

Ala Thr Arg Gln Asn Asn Trp Pro Pro Leu Pro Ser Phe Cys Pro Val
  130                      135                      140

Gln Pro Cys Phe Phe Gln Asp Ile Ser Met Glu Ile Pro Gln Glu Phe
  145                      150                      155                      160

Gln Lys Thr Val Ser Thr Met Tyr Tyr Leu Trp Met Cys Ser Thr Leu
                      165                      170                      175

Ala Leu Leu Leu Asn Phe Leu Ala Cys Leu Ala Ser Phe Cys Val Glu
  180                      185                      190

Thr Asn Asn Gly Ala Gly Phe Gly Leu Ser Ile Leu Trp Val Leu Leu
  195                      200                      205

Phe Thr Pro Cys Ser Phe Val Cys Trp Tyr Arg Pro Met Tyr Lys Ala
  210                      215                      220

Phe Arg Ser Asp Ser Ser Phe Asn Phe Phe Val Phe Phe Phe Ile Phe
  225                      230                      235                      240

Phe Val Gln Asp Val Leu Phe Val Leu Gln Ala Ile Gly Ile Pro Gly
  245                      250                      255

Trp Gly Phe Ser Gly Trp Ile Ser Ala Leu Val Val Pro Lys Gly Asn
  260                      265                      270

Thr Ala Val Ser Val Leu Met Leu Leu Val Ala Leu Leu Phe Thr Gly
  275                      280                      285

Ile Ala Val Leu Gly Ile Val Met Leu Lys Arg Ile His Ser Leu Tyr
  290                      295                      300

Arg Arg Thr Gly Ala Ser Phe Gln Lys Ala Gln Gln Glu Phe Ala Ala
  305                      310                      315                      320

Gly Val Phe Ser Asn Pro Ala Val Arg Thr Ala Ala Ala Asn Ala Ala
  325                      330                      335

Ala Gly Ala Ala Glu Asn Ala Phe Arg Ala Pro
  340                      345

```

## 55382-23.ST25.txt

<210> 10  
 <211> 321  
 <212> PRT  
 <213> Homo sapiens

<400> 10

Met Ala Gln Ser Arg Asp Gly Gly Asn Pro Phe Ala Glu Pro Ser Glu  
 1 5 10 15

Leu Asp Asn Pro Phe Gln Pro Pro Pro Ala Tyr Glu Pro Pro Ala Pro  
 20 25 30

Ala Pro Leu Pro Pro Pro Ser Ala Pro Ser Leu Gln Pro Ser Arg Lys  
 35 40 45

Leu Ser Pro Thr Glu Pro Lys Asn Tyr Gly Ser Tyr Ser Thr Gln Ala  
 50 55 60

Ser Ala Ala Ala Ala Thr Ala Glu Leu Leu Lys Lys Gln Glu Glu Leu  
 65 70 75 80

Asn Arg Lys Ala Glu Glu Leu Asp Arg Arg Glu Arg Glu Leu Gln His  
 85 90 95

Ala Ala Leu Gly Gly Thr Ala Thr Arg Gln Asn Asn Trp Pro Pro Leu  
 100 105 110

Pro Ser Phe Cys Pro Val Gln Pro Cys Phe Phe Gln Asp Ile Ser Met  
 115 120 125

Glu Ile Pro Gln Glu Phe Gln Lys Thr Val Ser Thr Met Tyr Tyr Leu  
 130 135 140

Trp Met Cys Ser Thr Leu Ala Leu Leu Leu Asn Phe Leu Ala Cys Leu  
 145 150 155 160

Ala Ser Phe Cys Val Glu Thr Asn Asn Gly Ala Gly Phe Gly Leu Ser  
 165 170 175

Ile Leu Trp Val Leu Leu Phe Thr Pro Cys Ser Phe Val Cys Trp Tyr  
 180 185 190

Arg Pro Met Tyr Lys Ala Phe Arg Ser Asp Ser Ser Phe Asn Phe Phe  
 195 200 205

55382-23.ST25.txt

Val Phe Phe Phe Ile Phe Phe Val Gln Asp Val Leu Phe Val Leu Gln  
210 215 220

Ala Ile Gly Ile Pro Gly Trp Gly Phe Ser Gly Trp Ile Ser Ala Leu  
225 230 235 240

Val Val Pro Lys Gly Asn Thr Ala Val Ser Val Leu Met Leu Leu Val  
245 250 255

Ala Leu Leu Phe Thr Gly Ile Ala Val Leu Gly Ile Val Met Leu Lys  
260 265 270

Arg Ile His Ser Leu Tyr Arg Arg Thr Gly Ala Ser Phe Gln Lys Ala  
275 280 285

Gln Gln Glu Phe Ala Ala Gly Val Phe Ser Asn Pro Ala Val Arg Thr  
290 295 300

Ala Ala Ala Asn Ala Ala Ala Gly Ala Ala Glu Asn Ala Phe Arg Ala  
305 310 315 320

Pro

<210> 11  
<211> 541  
<212> PRT  
<213> Homo sapiens

<400> 11

Met Lys Phe Leu Ile Phe Ala Phe Phe Gly Gly Val His Leu Leu Ser  
1 5 10 15

Leu Cys Ser Gly Lys Ala Ile Cys Lys Asn Gly Ile Ser Lys Arg Thr  
20 25 30

Phe Glu Glu Ile Lys Glu Glu Ile Ala Ser Cys Gly Asp Val Ala Lys  
35 40 45

Ala Ile Ile Asn Leu Ala Val Tyr Gly Lys Ala Gln Asn Arg Ser Tyr  
50 55 60

Glu Arg Leu Ala Leu Leu Val Asp Thr Val Gly Pro Arg Leu Ser Gly  
65 70 75 80

## 55382-23.ST25.txt

```

Ser Lys Asn Leu Glu Lys Ala Ile Gln Ile Met Tyr Gln Asn Leu Gln
      85                      90                      95

Gln Asp Gly Leu Glu Lys Val His Leu Glu Pro Val Arg Ile Pro His
      100                      105                      110

Trp Glu Arg Gly Glu Glu Ser Ala Val Met Leu Glu Pro Arg Ile His
      115                      120                      125

Lys Ile Ala Ile Leu Gly Leu Gly Ser Ser Ile Gly Thr Pro Pro Glu
      130                      135                      140

Gly Ile Thr Ala Glu Val Leu Val Val Thr Ser Phe Asp Glu Leu Gln
      145                      150                      155                      160

Arg Arg Ala Ser Glu Ala Arg Gly Lys Ile Val Val Tyr Asn Gln Pro
      165                      170                      175

Tyr Ile Asn Tyr Ser Arg Thr Val Gln Tyr Arg Thr Gln Gly Ala Val
      180                      185                      190

Glu Ala Ala Lys Val Gly Ala Leu Ala Ser Leu Ile Arg Ser Val Ala
      195                      200                      205

Ser Phe Ser Ile Tyr Ser Pro His Thr Gly Ile Gln Glu Tyr Gln Asp
      210                      215                      220

Gly Val Pro Lys Ile Pro Thr Ala Cys Ile Thr Val Glu Asp Ala Glu
      225                      230                      235                      240

Met Met Ser Arg Met Ala Ser His Gly Ile Lys Ile Val Ile Gln Leu
      245                      250                      255

Lys Met Gly Ala Lys Thr Tyr Pro Asp Thr Asp Ser Phe Asn Thr Val
      260                      265                      270

Ala Glu Ile Thr Gly Ser Lys Tyr Pro Glu Gln Val Val Leu Val Ser
      275                      280                      285

Gly His Leu Asp Ser Trp Asp Val Gly Gln Gly Ala Met Asp Asp Gly
      290                      295                      300

Gly Gly Ala Phe Ile Ser Trp Glu Ala Leu Ser Leu Ile Lys Asp Leu
      305                      310                      315                      320

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55382-23.ST25.txt

Gly Leu Arg Pro Lys Arg Thr Leu Arg Leu Val Leu Trp Thr Ala Glu  
325 330 335

Glu Gln Gly Gly Val Gly Ala Phe Gln Tyr Tyr Gln Leu His Lys Val  
340 345 350

Asn Ile Ser Asn Tyr Ser Leu Val Met Glu Ser Asp Ala Gly Thr Phe  
355 360 365

Leu Pro Thr Gly Leu Gln Phe Thr Gly Ser Glu Lys Ala Arg Ala Ile  
370 375 380

Met Glu Glu Val Met Ser Leu Leu Gln Pro Leu Asn Ile Thr Gln Val  
385 390 395 400

Leu Ser His Gly Glu Gly Thr Asp Ile Asn Phe Trp Ile Gln Ala Gly  
405 410 415

Val Pro Gly Ala Ser Leu Leu Asp Asp Leu Tyr Lys Tyr Phe Phe Phe  
420 425 430

His His Ser His Gly Asp Thr Met Thr Val Met Asp Pro Ser Arg Trp  
435 440 445

Met Leu Leu Leu Leu Phe Gly Leu Leu Phe Leu Met Leu Leu Gln Thr  
450 455 460

Trp Lys Lys Cys Cys Leu Gly Pro Arg Asn Ser Lys Lys Glu Thr Phe  
465 470 475 480

Ser Cys Phe Trp Pro Gly Ile Leu Gly Leu Gln Leu Trp Lys Thr Pro  
485 490 495

Leu His Ile Thr Ile Ser Ser Asn Ser Ser Ser Lys His Asn Ser Ile  
500 505 510

Ser Cys Phe Leu Leu Leu Ser Phe Leu Ile Leu Ser Lys Phe Ser Asp  
515 520 525

Ser Arg Lys Arg Asn His Ser Pro Leu Pro Pro Thr Thr  
530 535 540

<210> 12

## 55382-23.ST25.txt

&lt;211&gt; 441

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 12

Met Val Pro Pro Lys Leu His Val Leu Phe Cys Leu Cys Gly Cys Leu  
 1 5 10 15

Ala Val Val Tyr Pro Phe Asp Trp Gln Tyr Ile Asn Pro Val Ala His  
 20 25 30

Met Lys Ser Ser Ala Trp Val Asn Lys Ile Gln Val Leu Met Ala Ala  
 35 40 45

Ala Ser Phe Gly Gln Thr Lys Ile Pro Arg Gly Asn Gly Pro Tyr Ser  
 50 55 60

Val Gly Cys Thr Asp Leu Met Phe Asp His Thr Asn Lys Gly Thr Phe  
 65 70 75 80

Leu Arg Leu Tyr Tyr Pro Ser Gln Asp Asn Asp Arg Leu Asp Thr Leu  
 85 90 95

Trp Ile Pro Asn Lys Glu Tyr Phe Trp Gly Leu Ser Lys Phe Leu Gly  
 100 105 110

Thr His Trp Leu Met Gly Asn Ile Leu Arg Leu Leu Phe Gly Ser Met  
 115 120 125

Thr Thr Pro Ala Asn Trp Asn Ser Pro Leu Arg Pro Gly Glu Lys Tyr  
 130 135 140

Pro Leu Val Val Phe Ser His Gly Leu Gly Ala Phe Arg Thr Leu Tyr  
 145 150 155 160

Ser Ala Ile Gly Ile Asp Leu Ala Ser His Gly Phe Ile Val Ala Ala  
 165 170 175

Val Glu His Arg Asp Arg Ser Ala Ser Ala Thr Tyr Tyr Phe Lys Asp  
 180 185 190

Gln Ser Ala Ala Glu Ile Gly Asp Lys Ser Trp Leu Tyr Leu Arg Thr  
 195 200 205

Leu Lys Gln Glu Glu Glu Thr His Ile Arg Asn Glu Gln Val Arg Gln

210

215

220

Arg Ala Lys Glu Cys Ser Gln Ala Leu Ser Leu Ile Leu Asp Ile Asp  
 225 230 235 240

His Gly Lys Pro Val Lys Asn Ala Leu Asp Leu Lys Phe Asp Met Glu  
 245 250 255

Gln Leu Lys Asp Ser Ile Asp Arg Glu Lys Ile Ala Val Ile Gly His  
 260 265 270

Ser Phe Gly Gly Ala Thr Val Ile Gln Thr Leu Ser Glu Asp Gln Arg  
 275 280 285

Phe Arg Cys Gly Ile Ala Leu Asp Ala Trp Met Phe Pro Leu Gly Asp  
 290 295 300

Glu Val Tyr Ser Arg Ile Pro Gln Pro Leu Phe Phe Ile Asn Ser Glu  
 305 310 315 320

Tyr Phe Gln Tyr Pro Ala Asn Ile Ile Lys Met Lys Lys Cys Tyr Ser  
 325 330 335

Pro Asp Lys Glu Arg Lys Met Ile Thr Ile Arg Gly Ser Val His Gln  
 340 345 350

Asn Phe Ala Asp Phe Thr Phe Ala Thr Gly Lys Ile Ile Gly His Met  
 355 360 365

Leu Lys Leu Lys Gly Asp Ile Asp Ser Asn Val Ala Ile Asp Leu Ser  
 370 375 380

Asn Lys Ala Ser Leu Ala Phe Leu Gln Lys His Leu Gly Leu His Lys  
 385 390 395 400

Asp Phe Asp Gln Trp Asp Cys Leu Ile Glu Gly Asp Asp Glu Asn Leu  
 405 410 415

Ile Pro Gly Thr Asn Ile Asn Thr Thr Asn Gln His Ile Met Leu Gln  
 420 425 430

Asn Ser Ser Gly Ile Glu Lys Tyr Asn  
 435 440



55382-23.ST25.txt

<210> 13  
 <211> 212  
 <212> PRT  
 <213> Homo sapiens

<400> 13

Met Met Gly Ile Pro Ile Arg Lys Phe Ile Cys Ala Ser Asn Gln Asn  
 1 5 10 15

His Val Leu Thr Asp Phe Ile Lys Thr Gly His Tyr Asp Leu Arg Glu  
 20 25 30

Arg Lys Leu Ala Gln Thr Phe Ser Pro Ser Ile Asp Ile Leu Lys Ser  
 35 40 45

Ser Asn Leu Glu Arg His Leu His Leu Met Ala Asn Asn Arg Leu Glu  
 50 55 60

Ser Gln His His Phe Gln Ile Glu Lys Ala Leu Val Glu Lys Leu Gln  
 65 70 75 80

Gln Asp Phe Val Ala Asp Trp Cys Ser Glu Gly Glu Cys Leu Ala Ala  
 85 90 95

Ile Asn Ser Thr Tyr Asn Thr Ser Gly Tyr Ile Leu Asp Pro His Thr  
 100 105 110

Ala Val Ala Lys Val Val Ala Asp Arg Val Gln Asp Lys Thr Cys Pro  
 115 120 125

Val Ile Ile Ser Ser Thr Ala His Tyr Ser Lys Phe Ala Pro Ala Ile  
 130 135 140

Met Gln Ala Leu Lys Ile Lys Glu Ile Asn Glu Thr Ser Ser Ser Gln  
 145 150 155 160

Leu Tyr Leu Leu Gly Ser Tyr Asn Ala Leu Pro Pro Leu His Glu Ala  
 165 170 175

Leu Leu Glu Arg Thr Lys Gln Gln Glu Lys Met Glu Tyr Gln Val Cys  
 180 185 190

Ala Ala Asp Met Asn Val Leu Lys Ser His Val Glu Gln Leu Val Gln  
 195 200 205

Asn Gln Phe Ile  
210

<210> 14  
<211> 14  
<212> PRT  
<213> Homo sapiens  
  
<400> 14

Cys Ser Asp Thr Ser Pro Asp Thr Glu Glu Ser Tyr Ser Asp  
1 5 10

<210> 15  
<211> 15  
<212> PRT  
<213> Homo sapiens  
  
<400> 15

Cys Ser Asp Leu Lys Arg Ser Leu Gly Phe Val Ser Lys Val Glu  
1 5 10 15

<210> 16  
<211> 9  
<212> PRT  
<213> Homo sapiens  
  
<400> 16

Cys Ala Glu Glu Glu Lys Glu Glu Leu  
1 5